

# EVALUATING THE THREAT OF AGRO-TERRORISM

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## HEARING

BEFORE THE

### SUBCOMMITTEE ON INTELLIGENCE, INFORMATION SHARING, AND TERRORISM RISK ASSESSMENT

OF THE

### COMMITTEE ON HOMELAND SECURITY HOUSE OF REPRESENTATIVES

ONE HUNDRED NINTH CONGRESS

FIRST SESSION

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## EVALUATING THE THREAT OF AGRO-TERRORISM

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Wednesday, May 25, 2005

HOUSE OF REPRESENTATIVES,  
SUBCOMMITTEE ON INTELLIGENCE, INFORMATION  
SHARING, AND TERRORISM RISK ASSESSMENT,  
COMMITTEE ON HOMELAND SECURITY,  
*Washington, DC.*

The subcommittee met, pursuant to call, at 2:15 p.m., in Room 210, Cannon House Office Building, Hon. Rob Simmons [chairman of the subcommittee] presiding.

Present: Representatives Simmons, Gibbons, Dent, Cox (Ex Officio), Lofgren, Etheridge, Langevin, and Thompson [Ex Officio].

Mr. SIMMONS. The subcommittee will come to order. Instead of reading my opening statement because of the hour, I would like to insert it into the record as if read.

[The information follows:]

### PREPARED STATEMENT FROM THE HONORABLE ROB SIMMONS

I'd like to make one quick administrative note for Members before recognizing our witnesses. Today's hearing will be followed immediately by a classified threat briefing from experts from the DHS Office of Information Analysis, the National Counterterrorist Center, and the Federal Bureau of Investigation in the area of agricultural terrorism. This will be meeting for Members and limited committee staff only and will take place in the secure Committee spaces of room 202A of the Adams Building.

Our witnesses here today include Dr. Rocco Casagrande, Managing Director of Gryphon Scientific and former UN weapons inspector and Mr. Joseph Reardon, Food Administrator for the North Carolina Department of Agriculture & Consumer Services, Food and Drug Division.

Thank you both for being here today. It is very important that the threat of agro-terrorism be understood in the post 9/11 context. As the 9/11 Commission reminded us, our intelligence community suffered from a "failure of imagination." We in Congress must not make the same mistake. This hearing, along with the classified briefing we intend to have later today, will serve to focus on a threat that some in our country believe has been underestimated.

For instance, in December of 2004, former Secretary of Health and Human Services, Tommy Thompson summed up his view on the potential of terrorist attacks on U.S. agriculture when he remarked:

"For the life of me, I cannot understand why the terrorists have not attacked our food supply because it is so easy to do."

The focus of today's hearing is understanding that potential threat: What are the terrorist intentions and capabilities, what materials, both natural and engineered are available and have terrorist groups shown interest in an agricultural attack?

While attacks against agriculture are as old as war itself, the use of biological weapons against agricultural targets has remained primarily a theoretical consideration. The General Accounting Office considers bioterrorism to be an emerging threat but has concluded that terrorists are less likely to use biological weapons than conventional explosives. Additionally, Dr. Peter Chalk of the RAND Corporation has pointed out that "Despite the ease by which an act of agro-terrorism could

be carried out . . . it is unlikely to constitute a primary form of terrorist aggression. This is probably because such acts would probably be viewed as “too dry” in comparison with traditional tactics in the sense that they do not produce immediate, visible effects.”

The historical record indicates that biological weapons have rarely been used against crops or livestock despite extensive research devoted to this possibility in the past—particularly during World War II and the immediate aftermath, when several countries, including the United States, developed crop and livestock diseases as weapons of mass destruction.

Similarly, since 1912 there have been 12 documented cases of non-state uses of biological agents to deliberately infect livestock or contaminate produce. Of those, only *two* could be seen as terrorist in nature: The first example is widespread food poisoning carried out by a cult in Oregon in 1984. The other example is an attempt by the Japanese-based Aum Shinrikyo organization, in the early 1990s, to spread anthrax and botulinum toxin.

While history gives us an indication of what may be on the horizon, that does not mean we should look solely to the past. As 9/11 reminded us, we must think “outside of the box” in order to anticipate the next attack. But in doing so, we must also assess the risk of agro-terrorism in context with other threats to our homeland security, such as a potential radiological, nuclear or conventional bomb attack.

I’d again like to thank our witnesses today for helping us put the threat in context and offering their perspectives on the threat to agriculture.

Mr. SIMMONS. The topic this afternoon is evaluating the threat of agro-terrorism, an issue that is of great interest to us on this subcommittee and of great interest to many Americans around the country. We are all familiar with the attack on our country that took place on 9/11, an attack that involved the aviation industry and involved those of our citizens living and working in the World Trade Center and the Pentagon and elsewhere.

But there are other threats that we have to address when we look at the risks and the vulnerabilities of this country. One of those goes to the issue of our food supply and the possibilities of agro-terrorism, and that is the subject of this afternoon’s hearing.

I note that Mr. Etheridge would like to introduce our witness. I will extend to him that privilege.

But first I would like to yield to our ranking member to see if she has comments that she would like to make.

Ms. LOFGREN. Thank you, Mr. Chairman. As with your comment, I will submit my full statement for the record to save time.

But I would note that I am glad that our subcommittee is the first, to my knowledge, to address this potential threat to our Nation. As you have pointed out, an attack on agriculture would not necessarily kill a large number of people, at least not immediately, but it is something we ought to be concerned about. I think the hook for our subcommittee really is the role of intelligence in understanding the nature of the threat and certainly communicating with the appropriate authorities about what is known and what steps to take.

At the conclusion of this public hearing, we will have a classified briefing that will go into things that are more appropriately dealt with in that setting. I would note that some of the questions I have will be reserved for that session, because the last thing we want to do is provide a roadmap to potential terrorists through our questions and answers here in this public session.

So with that, I would submit my statement for the record in noting that Mr. Etheridge is going to introduce the witness and also noting that Mr. Thompson, our ranking member for the full com-

mittee, is also present. Both of them have rural districts and know more about agriculture than I do.

So I yield back.

[The information follows:]

#### TALKING POINTS FROM THE HONORABLE ZOE LOFGREN

I am glad that our Subcommittee is the first to address this serious threat to our nation. Agro-terrorism is an important issue that has not received the full attention of the Homeland Security Committee until now.

When most people think of terrorism, they think of bombed out bridges, buildings, and hijacked airplanes being used as weapons - farms and ranches do not immediately come to mind.

However, ranches and farms remain valuable targets for terrorists. This is because of the many points of access to agriculture or food supply systems. It is also due to the relative ease of spreading highly contagious diseases among livestock, such as foot and mouth disease.

Unlike a nuclear weapon, an attack on agriculture would not necessarily kill a large number of people—at least not immediately. The first obvious signs of an agro-terror attack may not be seen for days, and may not even appear to be an intentional attack.

That is why intelligence information is critical to identifying and stopping an attack before or immediately after it occurs.

#### ***The Role of Intelligence***

The agriculture industry faces the same information sharing challenges as other critical infrastructure sectors.

For example, the agencies responsible for collecting information are not the same ones responsible for sharing it with local and state authorities.

- That results in confusion about whether and how to share classified information with parties that need it.
- It also “muddies the water” about what actions should be taken, by whom, and even where in the food processing system action should be taken. We need better mechanisms for intelligence agencies to share information.
- First, we must determine whether the Intelligence Community has the resources and talent it needs to sufficiently assess the agro-terror threat.
- Second, the intelligence information provided should be easily accessible at the federal, state, and local levels. The information should be specific and actionable by government officials and those in the private sector.
- Third, the information must be conveyed quickly and reliably in a way that targets the specific sector as much as possible.

#### ***Conclusion***

In closing, it is past time that our Committee addresses the issue of agro-terrorism. I hope today’s testimony is a starting point for future discussions of this important issue.

Mr. SIMMONS. I thank you for those remarks.

The chairman of the full committee, Mr. Cox, the gentleman from California has arrived, and I would yield to him for an opening statement.

Mr. COX. Thank you, Mr. Chairman. I will be brief. We are a Nation that is been nurtured for well over 200 years by our farmers, and our farmers produce food for much of the rest of the world. We have in them a great national asset of global, economic and humanitarian significance, of which we are all justifiably proud. They are one of America’s greatest success stories.

Terrorists have different values, feeding the hungry isn’t important to them. On the contrary, there is little doubt that they would ruthlessly starve us all if they could.

But that is not really the point. Noting that terrorists are evil and seek to propagate evil is not news, not actionable intelligence to any of us. Suffice it to say that we know terrorists would be glad

to inflict great harm on our civilian population and would gladly use biological and chemical weapons to do so.

Our agricultural community is a critically important and irreplaceable national asset. Our great assets can, in homeland security terms, be viewed as vulnerabilities, potential terrorist targets. For precisely that reason, they are critically important and irreplaceable. Meanwhile, we know that Al-Qa'ida and its ilk continue to seek opportunities to inflict massive, irreversible harm on us here at home.

That brings us to this afternoon's task, evaluating the threat of agro-terrorism. In other words, we are asking the question whether the vulnerabilities in our agricultural community line up with what we know of terrorist capabilities, plans and intentions.

If they do, then we must consider that our agricultural sector is at risk and then move on in other settings to consider how best to reduce or eliminate that risk.

First of all, though, we have to know what we are up against. Only then can we decide what to do about it.

Our witnesses will start us down that path. I want to welcome you and thank you for being here today. We hope first to get from you a historical perspective on agricultural attacks. That has to be our baseline.

Then we want to learn what is known about terrorist capabilities and about terrorist plans and intentions to target America's agricultural center.

That will bring us up to date.

In short, we have to start by disciplining ourselves to speak in factual rather than hypothetical terms. This hearing is such a step. If we do learn that there is a real risk of attack, a known threat aligning with an actual vulnerability in our agricultural sector, then we must ask how most effectively to prevent the potential attack.

If the risk is, at present, largely theoretical, we must nevertheless take it seriously, but at the same time exercise the discipline to prioritize that hypothetical risk against known risks to other significant sectors to our economy and to our society at large.

One final comment, Mr. Chairman. Examining the threat before settling on the solution before setting our national counterterrorism priorities makes eminent good sense. The uncomfortable fact is, we must prioritize even when it comes to Homeland Security to protecting American lives and our critical infrastructure. We have to work smart if we are to prevent the next attempted terrorist attack and the next after that.

We must continue to insist on the discipline of examining the universe of potential targets and the cold life of what we actually know about terrorist capabilities, plans and intentions. That is good common sense, and these are, of course, uncommon times. It is as right, though, for California, the largest agricultural State, as it is for Mississippi, North Carolina or anywhere else.

So it is the pattern we will follow in examining the potential for terrorist attack on other sectors of our society, I hope, as other subcommittees and the full committee pursue their responsibilities.

Thank you, Mr. Chairman, I yield back.



Mr. SIMMONS. I thank the chairman of the full committee for his remarks.

Now I would like to recognize the ranking member of the full committee, Mr. Thompson, for his opening statement.

Mr. THOMPSON. Thank you, very much, Mr. Chairman, and ranking member Ms. Lofgren, and Mr. Cox, chairman of the full committee. I look forward to the testimony today. I am one of those members of Congress who lives in a very rural district. Agriculture is the second leading source of income for my constituents. This issue is very near and dear to me. I have a written statement for the record that I will submit.

I also would like to indicate that about 4 months ago, we made the request of the chairman to look at agro-terrorism from the committee standpoint. This is the beginning of what will be a series of hearings on this critical issue over the next few months.

I will yield the rest of my time, Mr. Chair, and submit the written testimony for the record.

[The information follows:]

PREPARED STATEMENT FROM THE HONORABLE BENNIE THOMPSON FOR THE RECORD

- I am glad we are finally holding what I expect will be the first of several hearings on the critical issue of Agro-Terrorism.
- Almost four months ago, I requested that Chairman Cox hold a hearing to determine whether the Department of Homeland Security has made any progress toward meeting the responsibilities laid out in Homeland Security Presidential Directive-9 (HSPD-9).
- This directive gave DHS responsibility for ensuring our agriculture and food supply security efforts were coordinated and implemented - including efforts of the state and local governments and private sector.

**The Threat is Real**

- Agro-terrorism—and the threat it poses to our food supply—is as great today as it was in January 2004 when HSPD-9 was issued.
- In fact, this past December, retiring Secretary of Health and Human Services Tommy Thompson stated, “For the life of me, I cannot understand why the terrorists have not attacked our food supply because it is so easy to do. We are importing a lot of food from the Middle East, and it would be easy to tamper with that.”
- During the U.S. invasion of Afghanistan, an Al-Qa’ida training manual found in a cave reportedly discussed the destruction of crops, livestock and food processing operations.
- It is imperative that we fully understand the threats facing our agriculture and food supply sectors.

**Role of the Federal Government**

- It is also imperative that the Federal government do everything possible to support local and state efforts to secure these sectors. This can be done in several ways.
- First, the Federal government can help by providing timely and accurate intelligence information to states through a reliable system that can be easily accessed by officials. This information should also be sufficiently unclassified so that it can be disseminated as quickly as possible to the necessary parties.
- Another way the Federal government can assist state and local governments is for DHS to provide a detailed implementation strategy for HSPD-9. This strategy has yet to be shared with Congress—even though we requested this information over a year ago.
- A strategy would provide much-needed clarity to folks by identifying concrete steps that need to be taken or more clearly spelling out the roles and responsibilities of the various agencies involved in preventing, detecting, and responding to an agro-terror attack.
- I believe we will hear testimony shortly that speaks directly to this point.
- Finally, I believe the Federal government can reduce the local response time to an incident by providing quick and accurate scientific assessments when called upon by state and local agriculture departments and the private sector.
- I look forward to this hearing as a first-step in fulfilling this Committee’s constitutional oversight responsibilities over the Department of Homeland Security.

Mr. SIMMONS. I thank the gentleman for his comments. At this point, I would like to recognize Mr. Etheridge for purposes of an introduction.

Then I will introduce Dr. Casagrande.

Mr. Etheridge.

Mr. ETHERIDGE. Mr. Chairman, thank you for the opportunity and Ms. Lofgren, Chairman Cox and Ranking Member Thompson, for having the hearing and secondly, I hope this is just the beginning of the hearings we will have and hopefully some field hearings because this is, as I think has been said, a very important topic.

I am pleased today that we are going to get to hear from my friend Joe Reardon from North Carolina, who really has a story to tell. He has been instrumental in developing North Carolina's agro-security, preparation and response plans. I think we will learn a great deal today from his experience.

As you well know and has been stated already, agricultural is one of our Nation's 17 critical infrastructure sectors and contributes about \$1.2 trillion to our economy every year and it counts for one in six jobs.

We certainly know that terrorists would like nothing better than to interrupt our food supply. I think it is vital that we do this, have these hearings. I thank you for doing it. It is important that we get Federal agencies working together with State agencies and the private sector, because it is imperative.

Joe is currently food administrator for the North Carolina Department of Agricultural and Consumer Services Food and Drug Division. He has about 25 years of service in food inspection, safety and security. He previously served as a Special Assistant to the Commission of Agricultural Food and Agricultural Commission.

In this role he had the opportunity to develop a statewide mitigation program for Exotic Newcastle Disease and led the development of the Nation's first infectious disease hazard to be included in a State FEMA plan.

He holds degrees from North Carolina State University and is currently working on his second degree from a university in the State. He is currently serving as a board member for the Association of Food and Drug Officials of the Southern States and is also a member of the Association of Food and Drug Officials. He is the author of numerous national articles.

We are pleased to have him with us today, Mr. Chairman.

Mr. SIMMONS. I thank you for that introduction. Yes, indeed, Mr. Reardon, we are glad to have you here.

Dr. Rocco Casagrande is our second witness. He is the managing director of Gryphon Scientific. For the past 5 years, he has been studying the problems of agricultural bioterrorism. For several years, he served as the United Nations Biological Weapons Inspector in Iraq, where I understand he was engaged in numerous inspections, over 50 inspections in that country. He also served as chief of the United Nations Biological Analysis Laboratory.

He comes to us from Cornell University, where he has a BA in chemistry and a BA in biology and a Ph.D. in experimental biology from MIT. He is the publisher of numerous articles on molecular biology, cell biology, genetics and biochemistry.

Welcome, it is good to have you here.

Gentlemen, a year ago, the former Secretary of Health and Human Services, Tommy Thompson, made the following comment regarding the potential of terrorist attacks on U.S. agricultural when he said, and I quote. "For the life of me, I cannot understand why the terrorists have not attacked our food supply, because it is so easy to do."

Because it is so easy to do.

The focus of today's hearings is that of the potential threat. What are the terrorist intentions and capabilities? What materials, both natural and engineered, are available and have terrorist groups shown interest in an agricultural attack? That is the question we put to you today, and we look forward to hearing your testimony.

Mr. SIMMONS. You can proceed in any way you wish. You can flip a coin, you can go alphabetically. I will leave it to you two gentlemen.

**STATEMENT OF JOSEPH W. REARDON, FOOD ADMINISTRATOR,  
FOOD AND DRUG PROTECTION DIVISION, NORTH CAROLINA  
DEPARTMENT OF AGRICULTURE AND CONSUMER SERVICES**

Mr. REARDON. Thank you, Chairman, my name is Joe Reardon, I am thankful to be here today—and Chairman Rob Simmons and Ranking Member Zoe Lofgren and distinguished members of this subcommittee. I would like to thank you for the opportunity today to offer this testimony. I have the privilege and honor to convey to the subcommittee—

Mr. SIMMONS. Gentlemen, if you could turn your microphone on that would be helpful.

Mr. REARDON. Okay. I will start over again. Chairman Rob Simmons and Ranking Member Zoe Lofgren and distinguished members of the subcommittee. I would like to thank you for the opportunity to offer this testimony today.

I have the privilege and honor to convey to the subcommittee the significance of protecting North Carolina agriculture, both economically and in terms of food production. My direct involvement with food safety at various levels for more than 24 years will hopefully provide the subcommittee a prospectus from the grassroots level.

North Carolina is one of a handful of States that produces the majority of America's food supply. Our swine and turkey industries rank both second and our poultry industry ranks third in the nation. Agri-business contributes \$59 billion annually to the State's economy and accounts for 21.5 percent of the State's income, and employs over 18 percent of our workforce.

Thus, North Carolina's economic stability depends on agri-business and, in turn, the Nation depends on North Carolina's food and agriculture. A significant challenge facing agriculture is that we do lack a full understanding of the vulnerabilities to agriculture.

Taiwan learned firsthand the economic impact of foot and mouth disease. In 2002, the first year Taiwan port was cleared for export following the outbreak of 1997, their export levels were less than a half of 1 percent of the preoutbreak levels, quite devastating.

When Exotic Newcastle Disease broke out in California. Our State, leaning forward, funded a project of \$263,000 to conduct an assessment and education initiative to reduce the potential threat to our own commercial poultry industry valued at \$2.1 billion.

Our assessment of the transportation sector revealed something quite alarming to us. North Carolina today receives 1,300 birds a day through the United States Postal Service with over 70 percent of these birds having no visible formal health documentation accompanying those birds into our State. Birds are commingled during shipping, sorting and storage and may be transported to other States posing a national risk.

But animal production facilities are at risk, but so is produce and other crops and not just from exotic diseases and terrorists. My department, in the first week of May, received a call from a local retail grocery chain describing a local complaint where a small child had bit into a strawberry with a sewing needle embedded in the product. Follow-up investigation suggested this to be an isolated incident.

But in the case of broader-scale adulteration or serious injury, the impact would be felt statewide. As this is the peak week of strawberry season in North Carolina, this act alone could have placed a \$15 million industry at risk. The former Secretary of Health and Human Services, Tommy Thompson said, "For the life of me, I cannot understand why terrorists have not attacked our food supply, because it is so easy to do," as quoted by the chairman.

Committee members, unfortunately this is a true statement. We have hardened and highly critical visible metropolitan infrastructure. Agriculture becomes a ripe target or a highly visible target or an economically potent impact. A summary of the money spent on the entire counterterrorism efforts compiled by the Association of Food and Drug Officials, revealed that out of the \$960 million in Federal funding given in 2003, 4.5 percent of that funding went to plant and animal disease initiatives, while less than one half of 1 percent was devoted to protecting all other elements by the food supply.

Securing agriculture presents unique challenges. I respectfully submit to you a portion of our recommendations with the remainder in my full testimony.

NCDA recommends a current review of the funding allocation that is based on population in favor of formulas that will more accurately reflect the agriculture risk. For example, North Carolina, Sampson County has 1/12 of the population of Mecklenburg County, but it generates five times the farming cash receipts and is one of the most agriculturally productive regions in the world.

In the same way that Centers for Disease Control and Prevention, CDC, has funneled bioterrorism funding for State departments of Health and Human Services, a dedicated stream of funding for State departments of agriculture with a mandate for preparedness is absolutely necessary.

More than 80 percent of the food safety activities include inspections, investigations of food-borne illness, enforcement actions and response to emergencies involving food products are performed at the State and local levels in the United States, specifically departments of agriculture across this country. State personnel are, therefore, in an ideal position to provide food producing sector with outreach information, food defense strategies and serve as a key link between the food production system and law enforcement.

We also request a formal review of the procedures and protocols for the movement of animals through the United States Postal Service facilities, taking into considerations findings of the North Carolina Exotic Newcastle Disease Project and the implications of those unregulated shipments on public health and the spread of agricultural diseases.

Through my testimony today, I hope to have been effective in describing North Carolina's progressive stance in addressing the agro-terrorism threat. North Carolina understands emergency response issues, but we are anxious at how much remains to be done in this State and the rest of the Nation. States have the relationships to implement required programs to safeguard our food supply. We have developed a culture of food safety since 1906, but we have yet to develop a culture of food defense.

We appreciate the opportunity to address the challenges ahead, and I look forward to answering any questions that you may have regarding my testimony.

[The statement of Mr. Reardon follows:]

#### PREPARED STATEMENT FROM JOSEPH W. REARDON

I would like to thank Chairman Rob Simmons, Ranking Member Zoe Lofgren, and Distinguished Members of the Subcommittee for the opportunity to offer this testimony. You are faced with a most challenging task of anticipating plans of terrorists and deciding between competing priorities to keep this nation safe and secure. My direct involvement with food safety at various levels for more than 24 years will hopefully provide the Subcommittee with a perspective from the grassroots level.

Today I have the privilege and honor to convey to the Subcommittee the significance of North Carolina's agriculture, both economically and in terms of food production. My testimony will address the threat of agro-terrorism and describe the potential impact of such an attack. I will conclude by delineating preparedness and mitigation activities that the State of North Carolina is currently engaged in, and respectfully submit to the committee several proposals for hardening one of our greatest assets and most critical infrastructures; the food supply from farm-to-fork.

North Carolina is one of a handful of states that produces the majority of America's food supply. Our swine and turkey industries rank 2nd and poultry industry ranks 3rd highest in the United States.<sup>1</sup> We supply enough pork to feed out of every 4 families in America and supply 1 in 7 turkeys at Thanksgiving. These industries, along with crops and associated agribusinesses, contribute \$59 billion annually to the State's economy, account for 21.5 percent of the State's income, and employ over 18 percent of the work force.<sup>2</sup> Thus, North Carolina's economic stability depends on its agribusiness and, in turn, the nation depends on North Carolina's food and agriculture.

#### THREAT TO AGRICULTURE AND POTENTIAL IMPACT

An attack on this nation's agriculture system is likely to have an immediate, substantial, and permanent effect on our production capability and export opportunities according to the Congressional Research Service report titled, *Agro-terrorism: Threats and Preparedness* released February 4, 2005.<sup>3</sup>

The foot and mouth disease (FMD) virus, for example, persists on clothing and in animal tissue. Little skill or training is required for nefarious individuals to smuggle infected items or meat to the United States and expose susceptible animals, be they cattle or hogs. When we add to this equation over 20,000 hogs that leave NC every day and the likelihood that terrorists would infect several states simultaneously, we are certain to have a nationwide outbreak before we first detect the disease. These conclusions are consistent with the data garnered from the "Crimson Sky" FMD exercise series conducted by the National Defense University with our Department providing technical expertise. Findings of the disease modeling from this exercise indicated that if 2 farms were infected, FMD would spread to 12 states within 10 days.<sup>4</sup> If 5 farms are initially infected, then the disease could reach 35 states within the same period of 10 days. A GAO report released in 2002 estimated that eradication may cost up to \$24 billion.<sup>5</sup> Taiwan learned first hand the economic impact of foot and mouth disease. In 2002, the first year that Taiwan pork was

cleared for export following the 1997 outbreak, pork exports were just over half of one percent of pre-outbreak levels.<sup>6</sup>

A significant challenge facing agriculture is that we do not have a full understanding of our food and agriculture vulnerabilities. Aside from awareness of several worst-case scenarios, we have only rudimentary vulnerability data. One recent initiative to collect detailed vulnerability information was made as part of the Exotic Newcastle Disease (END) project conducted by the Department following an outbreak of the disease in California poultry. One of the most striking findings from this risk assessment is the unchecked mass movement of poultry, game birds, and other species such as turkeys through our United States Postal Service. Our assessment revealed that North Carolina receives as many as 1,275 birds a day from across the United States and over 70 percent of these birds gain entry without any formal disease testing.<sup>7,8</sup> These birds are commingled in the postal offices without proper biosecurity precautions and may be further transported to other states posing a national risk. In light of the persistent Avian Influenza outbreak in Asia, this situation is the potential agricultural equivalent of the “biological agent release at a football stadium” with a certain nationwide dispersion of sick animals.

Animal production facilities are at risk, but so is produce and other crops; and not just from exotic terrorists’ agents. The North Carolina Department of Agriculture & Consumer Services (NCDACS), in the first week of May 2005, received a call from a local retail grocery chain describing a customer complaint where a child bit into a strawberry with a sewing needle embedded in the product. Follow-up investigation suggested this to be an isolated incident, but in the case of a broader scale adulteration or a serious injury, the impact would be felt statewide. As this is the peak of strawberry season for North Carolina, over \$15 million is at risk.<sup>9</sup>

The threat of agro-terrorism can be just as potent a weapon as the actual act. One documented case occurred in 1989 when a terrorist group phoned the US Embassy in Chile claiming to have contaminated grapes destined for the US with cyanide. Exhaustive surveillance efforts by the Food and Drug Administration revealed only three suspicious grapes on a dock in Philadelphia, PA. However, American supermarkets pulled all Chilean fruit including peaches, blueberries, blackberries, melons, green apples, pears, and plums off shelves throughout the US resulting in the loss of an entire season’s fruit sales from Chile at a cost of \$200 million in lost revenue.<sup>10</sup>

The former Secretary of Health and Human Services Tommy Thompson said, “For the life of me, I cannot understand why the terrorists have not attacked our food supply because it is so easy to do.”<sup>11</sup> Unfortunately, this is a true statement. The NCDACS respectfully submit to you that we are not prepared for this threat. Homeland security funding has hardened critical infrastructures in America’s population centers and this is consistent with the affinity of Al-Qa’ida for high profile targets. However, as we harden highly visible, metropolitan infrastructures, greater pressures are placed on agriculture as a ripe target for an asymmetrical attack with high visibility and an economically potent impact.

#### **NORTH CAROLINA PREPAREDNESS AND MITIGATION ACTIVITIES**

North Carolina has a long history of disaster preparedness efforts fine-tuned by repeated hurricanes. The State is proactive in identifying and mitigating new threats within the constraints of limited state budgets.

- North Carolina formed a food safety and defense task force in November 2001 in an effort to establish a unified and coordinated approach to identify the vulnerabilities and safeguard the food supply. The task force is co-chaired by representatives from the North Carolina Department of Health and Human Services and the North Carolina Department of Agriculture and Consumer Services with membership from other key state agencies, industry, and academia.
- The Department provided the technical expertise to conduct the Crimson Sky Exercise Series I alluded to previously in addition to the follow-up exercises Crimson Winter and Crimson Guard.
- We have invested heavily in a Geospatial/Geographical Information Systems (GIS) that not only serves Departmental needs but reaches out to other vital agency partners in the State including the State Bureau of Investigation, Division of Emergency Management, Department of Health and Human Services, Department of Environment and Natural Resources as well as industry to provide a common operational picture for the State.
- Under the Disaster Mitigation Act of 2000 that directed states to develop a State Hazard Mitigation Plan, North Carolina is the only state in the nation to include infectious disease in the list of known and mitigatable hazards such as floods, hurricanes, and earthquakes. The plan was written and submitted in

full partnership with the Department of Health and Human Services and categorizes diseases by route of transmission. This makes North Carolina eligible to receive funding to mitigate a future infectious disease to prevent a large-scale, economically costly outbreak.

- We have hosted and participated in national level symposiums to discuss environmentally, socially, and industry acceptable methodologies of mass euthanasia and carcass disposal that could be utilized in a large-scale livestock disease eradication program. Concurrently, we are working on alternative disease control strategies to eliminate the need for such drastic methods of disease control.

#### **ACTION NEEDED**

Securing agriculture presents unique challenges. I respectfully submit to you the following recommendations which augment those made in the testimony of Mr. David Miller before the Subcommittee on Emergency Preparedness, Science and Technology on April 12, 2005 and Dr. Thomas McGinn's testimony before the Senate Governmental Affairs Committee in November 2003. I would like to preface my remarks by saying that unique conditions exist in each state that provide an opportunity for development of innovative preparedness, mitigation, and response initiatives. Success will depend on identifying and enhancing these programs at the state level through federal funding.

- NCDA&CS recommends a review of current funding allocation that is based primarily on population in favor of formulas that more accurately reflect agricultural risk. As high agricultural density areas are inversely proportional to human population centers, agriculture tends to receive inadequate preparedness support. For example, North Carolina's Sampson County has only 1/12th the population of Mecklenburg County, but generates nearly 5 times the farming cash receipts.<sup>12,13</sup> Sampson County receives little homeland security funding, and yet is one of the most agriculturally productive regions in the world.
- In the same way that the Centers for Disease Control and Prevention (CDC) has funneled bioterrorism funding for state departments of health and human services, funding for state departments of agriculture also needs to have a dedicated funding stream with a mandate of preparedness. According to the Association of Food and Drug Officials (AFDO), more than 80 percent of the food safety and security activities including inspections, investigation of foodborne illnesses and consumer complaints, enforcement actions, and response to emergencies involving food products are performed at the state or local levels in the US.<sup>14</sup> State personnel, therefore, are in the ideal position to provide the food producing sector with outreach information, food defense strategies, and serve as the key link between the food production system and law enforcement. Unfortunately, out of \$960 million federal counterterrorism funding given to states in 2003, 4.5 percent went to plant and animal disease initiatives while a mere 0.4 percent was devoted to protecting all other elements of the food supply.<sup>15</sup> Federal funding must reflect additional demands for food defense.
- We support the creation of a national consumer complaint system to facilitate information sharing and coordination among state and local agencies involved in food safety and defense. This would enable timely, sector-specific, yet nationwide notification of food producers, processors, and inspectors of attacks on the food supply to facilitate intervention and expanded surveillance actions.
- We need to take one of the most severe agro-terrorism diseases off the table by reducing the consequences of an FMD epidemic. The only thing more daunting than FMD itself is our nation's planned response to an outbreak which includes euthanizing millions of animals based on the UK experience of 2001. Current disease control policy provides little incentive for farmers to proactively remain disease free. A producer whose animals are infected with FMD receives reimbursement by the federal government for the loss of his stock. However, a farmer with healthy animals receives no compensation, yet he faces a likely state-wide quarantine that prevents him from marketing his meat or milk product while still incurring the expense of feeding and caring for his livestock. Therefore, farmers that maintain disease free animals may encounter an economic situation more dire than those with infected livestock.

We request the creation of a multi-agency taskforce with decision authority to embrace modern technology for diagnosis, surveillance, and vaccination as well as address policy issues that prevent the implementation of a modern disease control program. These issues, including the need for "cow-side" testing were highlighted in the recent GAO report on protecting agriculture.<sup>16</sup>

- Disease simulations, as well as national and international disease outbreaks, have shown that laboratory capacity can be a limiting factor in disease control.

While we fully support strengthening the national laboratory system through initiatives such as the National Animal Health Laboratory Network (NAHLN), Laboratory Response Network (LRN), and upgrades to the National Veterinary Services Laboratory in Ames, Iowa, equal considerations should also be given to state agriculture laboratory facilities which routinely service their crop, food, and livestock industries. State laboratories will be the first line of defense and must provide needed surge capacity should an outbreak occur.

- We strongly urge the continued support of state based Geographic Information Systems (GIS) initiatives. GIS allows the mapping of production facilities, production plants, and retail establishments to quickly assess the scale of the incident, determine populations at risk, and appropriate the required resources during an incident response. State GIS allows us to leverage our close relationships with stakeholders in agriculture production, processing, transport, and retail to obtain validated data which is available for federal response needs.
- We request a formal review of procedures and protocols for movement of animals through United States Postal Service facilities taking into consideration the findings of the END project and the implications of unregulated shipments on public health and the spread of agricultural diseases.
- Lastly, we request support for the North Carolina Food and Agriculture Defense Project which strives to develop, in partnership with sector specific industries, detailed mitigation, response, and recovery plans and incorporate new technologies designed to reduce the overall effects and impact from any terrorist act targeting the State's food supply. We need a state program, supported by a national policy environment, to assess the vulnerabilities of the food chain using a nationally recognized model. Information gathered from these assessments will be appropriately shared with USDA or FDA to be used in the refinement of templates for state specific plans.

#### SUMMARY

Through my testimony today, I hope to have effectively described North Carolina's progressive stance in addressing agro-terrorist threats. North Carolina understands emergency response issues, but we are anxious at how much remains to be done in our State and the rest of the nation. States have the relationships and share the geographical space necessary to develop the required programs to safeguard our food industries. We have developed a culture of food safety since 1906 with the enactment of the Federal Food, Drug, and Cosmetic Act. We have yet to develop a food defense culture.

We appreciate the opportunity to address the challenges ahead. I look forward to answering any questions you may have regarding my testimony.

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## APPENDIX A

### North Carolina Exotic Newcastle Disease Project

Investigation of Bird Container Movement  
2003

## EXOTIC NEWCASTLE DISEASE PROJECT

### United States Postal Service Express Mail Handling Of Live Birds



Figure 1

- Photo shows the handling of live birds on the same table as express mail in close proximity to express mail bags
- No bio-security practices used
- Commingling of birds with health documentation and those without
- Fans blowing across birds to workers and express mail resulting in potential contamination of workers
- **USPS Inspectors banned NCDA&CS from enforcing NC import laws**

## EXOTIC NEWCASTLE DISEASE PROJECT

### USPS Movement of Live Birds into NC

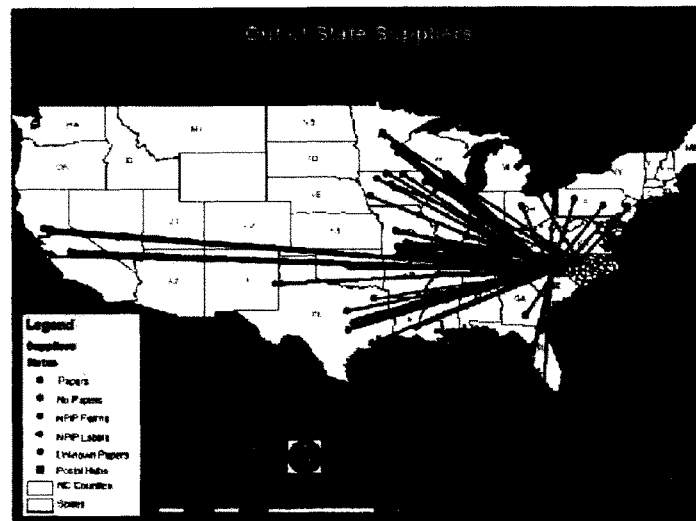


Figure 2

Map shows movement of bird containers into NC by zip code of shipper

- **Red:** without health documentation
- **Green:** with health documentation
- **Black:** unknown health documentation
- **Blue:** with health papers

## EXOTIC NEWCASTLE DISEASE PROJECT

### Movement of birds through North Carolina US Postal Service facilities

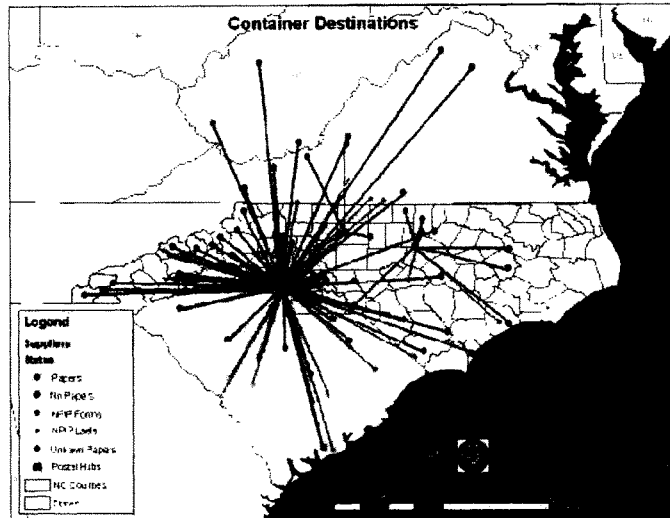


Figure 3

Map shows destination of birds shipped through US Postal Service facilities in Charlotte, Durham, and Greensboro, NC

- **Red:** without health documentation
- **Green:** with health documentation
- **Black:** unknown health documentation

## EXOTIC NEWCASTLE DISEASE PROJECT

### USPS Birds Imported From Other States into NC

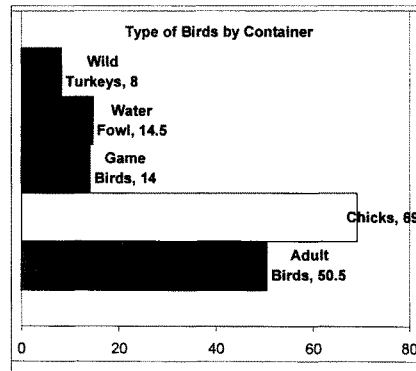


Figure 4

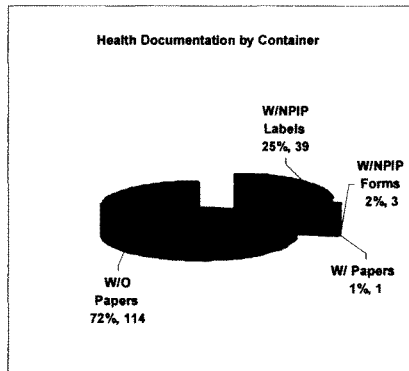


Figure 5

- Histogram illustrates types of birds imported from other states to NC through the US Postal Service facilities
- Wild turkeys, which are illegal to import into North Carolina, make up 8% of all bird shipments
- Pie Chart shows 72% of birds imported from other states do not have health papers

Mr. SIMMONS. Thank you very much for that testimony. Before we get into questions, we will ask Dr. Casagrande to provide his testimony.

You will notice we have a 5-minute clock. We are a little liberal with that, which is fine, but feel free to summarize parts of your testimony if it is extensive.

**STATEMENT OF ROCCO CASAGRANDE, MANAGING DIRECTOR,  
GRYPHON SCIENTIFIC**

Mr. CASAGRANDE. Good afternoon, Mr. Chairman and members of the committee. I greatly appreciate the chance to appear before you today to offer my testimony on the nature of the threat to U.S. agriculture. The threat to U.S. agriculture is primarily economic. Agriculture disease agents intentionally spread amongst crops or livestock in the U.S. have the potential to cause billions of dollars of damage to the U.S. economy.

These losses will be incurred from disease control costs and associated reductions in tourism, food processing, transportation and trade. It is my opinion that U.S. agriculture is threatened by a wide variety of actors, from States and economic competition with the United States to fringe animal rights groups to lone criminals, to Al-Qa'ida.

The variety of a threat of an attack on the U.S. agriculture system is borne out of two main factors. One the technological barriers to an attack are easily surmountable by even technically unsophisticated actors; and, two, an attack on agriculture would help fulfill the goals of many State and nonstate actors.

Let me begin by commenting on the first factor, that the technological barriers to an attack are easily surmountable. Influencing this factor is the nature of the disease agents themselves, the pathogens, that may be used in an attack on agriculture. The pathogens that are most dangerous to U.S. agriculture are those contagious agents that can spread explosively in a herd or between farms.

The simple direct exposure of animals or plants to infected material—such as a tainted cloth dropped into an animal pen or handfuls of infected plant material thrown into fields—may begin an outbreak that affects thousands to millions of animals or acres or crops. Further facilitating the use of agriculture pathogens is the fact that they are easily handled by even technically unsophisticated actors. First of all, the most contagious agents do not cause significant disease in humans, enabling the manipulation of the agent in rudimentary facilities, such as basements or farms.

Once smuggled into the country, enough agent could be manufactured for an attack by the intentional infection by plant cuttings or captive animals. These living factories could produce kilograms of infected material that could then be introduced into fields or pens all over the United States.

Unfortunately, pathogens of this kind are not particularly rare. Foot and mouth disease, Rinderpest, Newcastle Disease, African Swine Fever, wheat smut and rice blast few of the diseases that could be used and have all of the qualities described above. These pathogens are endemic to the developing world, and an adversary need only find disease outbreaks to find the source of their agent.

It is not only the nature of the dangerous agricultural pathogens, but also the nature of modern agriculture systems that facilitates an attack.

Modern U.S. agriculture is vast, mobile and consolidated. Its vastness implies that large feed lots and farms are almost physically impossible to secure. The livestock industry is mobile. Animals are moved between States to various facilities that lean, fatten and finish them. This movement enables infected animals to come in contact with thousands of other in facilities all across the country. Also the U.S. agriculture industry is highly consolidated an attack that affects even one processor would affect a significant portion of the industry.

U.S. agriculture is dominated by many big businesses that employ tens of thousands of Americans. The shares of these businesses, the commodities they produce and the futures derived from them comprise a significant portion of our financial markets.

Because of the economic hardship that a disease outbreak can bring, even minor outbreaks or rumors of outbreaks can create shockwaves within the stocks and future markets, causing the overnight losses billions of dollars in market value.

When an outbreak is identified, the system to control and eradicate disease leads to further economic loss. Exports are prevented to halt the spread to our trading partners. To prevent the spread of disease within our country, agricultural movement is halted and the transportation in agricultural areas may be disrupted. When an outbreak is identified on a farm, the diseased animals and all animals at risk of infection are slaughtered.

Taken together, these qualities of U.S. agriculture imply that even an attack on a few animals or plants can be spread to a significant portion of the industry quickly due to the nature of the industry. Even if the disease does not spread far, our disease control efforts will magnify the costs of the disease far beyond the cost of the plants and animals directly infected. Further, even outbreaks that are rapidly identified and controlled can cause losses to market fluctuations. When these qualities of U.S. agriculture are considered along with the qualities of agricultural pathogens, a grim picture of the technical barriers to an attack come into focus.

Because agricultural pathogens are relatively easy to find, acquire, manipulate and use to strike thousands of animals or plants, adversaries with little technical skill can attempt an attack. Because of control efforts, movement restrictions and market forces, even an attack that reaches only a single farm may inflict damage beyond its proportions.

For these reasons, an attack on agriculture is within the reach of any State or substate group or even an individual. Because technical factors only widen the field of actors who can threaten agriculture, let me turn your attention to the second factor influencing the threat, that an attack on agriculture is consistent with the goal of several groups. Rival States have significant financial motivation to attack U.S. agriculture. By initiating a disease outbreak in the U.S., rival States could capture our export markets.

For radical ecologist and animal rights groups, an attack on agriculture is a means and an end. These groups loathe the treatment of animals in U.S. farming systems and the fact that a significant



portion of our U.S. crops are genetically modified. For these groups, an attack on agriculture is not a means to sow economic hardship or gain profit, but to destroy the industry that offends them. Criminals who wish to profit from an attack on agriculture are another type of actor who may threaten U.S. agriculture.

As stated above, significant losses may be inflicted due to market changes. Similarly, money can be made through the manipulation of futures markets or the short of stocks of affected companies.

Lastly, terrorists bent on destroying the U.S. could use an attack on agriculture as part of a larger campaign. Groups like Al-Qa'ida could seek an agriculture attack as a simple means to undercut one of our greatest economic strengths. I do not mean to imply that an attack on agriculture is imminent.

The factors influencing the threat to agriculture have been in place for several decades, and yet no large attack has been executed. What can be said with some certainty— although an attack on agriculture may never come, natural agricultural disease outbreaks strike the U.S. with some frequency.

Most measures that can be taken to reduce the damage of an attack on agriculture will likely help the natural disease outbreaks that will surely come. Investments in animal tracking and disease control systems will surely deliver a concrete benefit, even if the threat of an attack never materializes.

Thank you.

[The statement of Mr. Casagrande follows:]

PREPARED STATEMENT FROM ROCCO CASAGRANDE, PH.D.

Good afternoon, Members of the Committee. I greatly appreciate the chance to appear before you today to offer my testimony on the nature of the threat to US agriculture.

The threat to US agriculture is primarily economic. Agricultural disease agents, intentionally spread amongst crops or livestock in the US, have the potential to cause billions of dollars of damage to the US economy. These losses will be incurred from disease control costs and associated reductions in tourism, food processing, transportation and trade.

It is my opinion that US agriculture is threatened by a wide variety of actors, from states in economic competition with the US, to fringe animal rights groups, to lone criminals to Al-Qa'ida. The variety of the threat of an attack on the US agricultural system is born out of two main factors: 1) the technological barriers to an attack are easily surmountable by even technically unsophisticated actors, and 2) an attack on agriculture would help fulfill the goals of many state and non-state actors.

Let me begin by commenting on the first factor: that the technological barriers to an attack are easily surmountable. Influencing this factor is the nature of the disease agents, the pathogens, that may be used in an attack on agriculture. The pathogens that are most dangerous to US agriculture are those contagious agents that can spread explosively in a herd or between farms. The fact that these pathogens are highly contagious eliminates the need of the adversary to manufacture a complicated device to expose hundreds or thousands of animals or plants to the pathogen during the attack. No weaponization of the pathogen, and the complicated equipment required for that process, is necessary. The simple direct exposure of animals or plants to infected material (such as a tainted cloth dropped into an animal pen or handfuls of infected plant material thrown into fields) may begin an outbreak that affects thousands to millions of animals or acres of crops.

Further facilitating the use of agricultural pathogens is the fact that they are easily handled by even technically unsophisticated actors. First of all, the most contagious agents do not cause significant disease in humans. The fact that an adversary does not need to protect themselves from their agent of choice obviates the need for specialized protective equipment and facilitates manipulation of the agent in rudimentary facilities such as basements or farms. Furthermore, these pathogens are relatively hearty; many can survive in isolated tissues from a plant or animal

or on cloth for weeks. No special storage conditions are required during smuggling of the agent into the US. Lack of a requirement for special storage conditions suggests that the agent could be smuggled in easily concealable or disguised containers, such as wine bottles, Tupperware or, for those agents that survive on cloth, impregnated in the clothing of the adversary. Once smuggled into the country, enough agent can be manufactured for an attack by the intentional infection of bins of plant cuttings or captive animals. These living factories could produce kilograms of infected material that could then be introduced into fields or pens all over the US.

The nature of the pathogens that could be used on agriculture, therefore, eliminates the need for sophisticated laboratory equipment for the acquisition, production, processing or dissemination of the agent. Unfortunately, pathogens of this kind are not particularly rare. Foot and mouth disease, Rinderpest, Newcastle disease, African swine fever, wheat smut and rice blast are just a few of the diseases that could be used that have all of the qualities described above. These pathogens are endemic to the developing world and an adversary need only find disease outbreaks to find a source of their agent.

It is not only the nature of dangerous agricultural pathogens, but also the nature of the modern agricultural system that facilitates an attack. Modern US agriculture is vast, mobile and consolidated. Its vastness implies that large feedlots and farms are almost impossible to physically secure, enabling even incautious actors to gain access to their targets. The livestock industry is mobile; animals are moved between states to various facilities that wean, fatten and finish them. This movement enables infected animals to come into contact with thousands of others in facilities across the country. Also, the US agricultural industry is highly consolidated; an attack that affects even one processor would affect a significant portion of the industry.

US agriculture is dominated by big businesses that employ tens of thousands of Americans. The shares of these businesses, the commodities they produce and the futures derived from them, comprise a significant portion of our financial markets. Because of the economic hardship that a disease outbreak can bring, even minor outbreaks or rumors of outbreaks can create shockwaves within stock and futures markets, causing the overnight loss of billions of dollars in market value.

When an outbreak is identified, the system to control and eradicate the disease leads to further economic losses. Exports are halted to prevent the spread to our trading partners. Although our exports are halted, the demand for the commodity does not diminish, and importing nations will seek out other suppliers for goods the US can no longer supply. Once the importers establish a relationship with a new supplier, the US may find it difficult to recapture the lost markets; therefore, economic losses can persist for many years after the outbreak is stamped out. To prevent the spread of the disease within the country, agricultural movement is halted and transportation in agricultural areas may be disrupted. These movement restrictions will affect the transportation and tourism industries and may cause farmers unaffected by the disease to slaughter their animals due to the inability to obtain fodder. When an outbreak is identified on a farm, the diseased animals and all animals at risk of infection (usually all those in the affected premises) are slaughtered. Oftentimes, those animals at risk of infection reside at a different farm near a facility where an infected animal was found; these animals are often killed to create disease firebreaks.

Taken together, these qualities of US agriculture imply that even an attack on a few animals or plants can be spread to a significant portion of the industry quickly due to the nature of the industry. Even if the disease does not spread far, our disease control efforts will magnify the cost of the disease far beyond the cost of the plants or animals directly affected. Further, even outbreaks that are rapidly identified and controlled can cause losses due to market fluctuations.

When these qualities of US agriculture are considered along with the qualities of agricultural pathogens, a grim picture of the technical barriers to an attack comes into focus. Because agricultural pathogens are relatively easy to find, acquire, manipulate and use to strike thousands of animals or plants, adversaries with little technical skill can attempt an attack. Because of control efforts, movement restrictions, and market forces, even an attack that only reaches a single farm may inflict damage beyond its proportions. For these reasons, an attack on agriculture is within the reach of almost any state or sub-state group, or even an individual.

Because technical factors only widen the field of actors who can threaten agriculture, let me turn your attention to the second factor influencing the threat—an attack on agriculture is consistent with the goals of several groups—by addressing the motivation of several types of adversaries in turn.

Rival states have a significant financial motivation to attack US agriculture. By initiating a disease outbreak in the US, rival states could capture our export mar-

kets, causing a shift of billions of dollars a year from the US. States prosecuting a shadow war with the US may wish to harm us economically even if they do not directly benefit. The motivation to execute such an attack is underpinned by the uncertainty that an attack will be distinguishable from a natural disease outbreak. What would differentiate the accidental importation of FMD-infected swine from China to Taiwan from the intentional infection of swine shipped to Taiwan? Furthermore, the ambiguity of the US response to an attack on our agriculture may embolden a state adversary. A terrorist attack that kills Americans will surely invite military retaliation. However, would the President risk the lives of soldiers if a rival nation simply caused the destruction of our corn or cows?

For radical ecological and animal rights groups, an attack on agriculture is a means and an ends. These groups loathe the treatment of animals in the US farming system or the fact that a significant portion of US crops are genetically modified. To these groups, an attack on agriculture is not a means to sew economic hardship or to gain profit, but to destroy the industry that offends them. These groups, and their less radical allies, have issued statements wishing for the introduction of devastating disease into the US. The lack of human deaths in an agricultural attack is consistent with these groups somewhat non-violent operations.

Criminals, who wish to profit from an attack on agriculture, are another type of actor who may threaten US agriculture. As stated above, significant losses can be inflicted due to market changes when a disease outbreak is discovered. Similarly, money can be made through the manipulation of futures markets or selling-short of the stocks of affected companies. Furthermore, the threat of an attack can be used to blackmail agricultural interest groups and large companies. These criminals could be acting alone (due to the facility of the execution of an agricultural attack) or could be in a large group, such as a company wishing to cripple a rival.

Lastly, terrorists bent on destroying the US could use an attack on agriculture as part of a larger campaign. Groups like Al-Qa'ida could seek an agricultural attack as a simple means to undercut one of our greatest economic strengths.

All of these groups have the means to attack agriculture and each group has goals that would be satisfied such an attack, even if that attack fails to spread to a significant portion of the targeted sector due to the economic costs that even minor outbreaks can cause. For many of these groups, such as countries jockeying for economic advantage and radical ecological and animal-rights groups, no other type of attack can satisfy their goals. To address this threat, new policies and regulations that eliminate the ambiguity in the US response to an attack on agriculture and that reduce our adversaries' potential benefit from such an attack are needed.

I do not mean to imply that an attack on agriculture is imminent. The factors influencing the threat to agriculture have been in place for several decades and yet no large attack has been executed. It is possible that sub-state groups use only weapons that are close at hand and are unlikely to travel to exotic locations to acquire their agent. It is possible that the spread of a plant or animal disease pales in comparison to the theater caused by car bombs or other, more conventional and common types of attacks.

What can be said with some certainty is that, although an attack on agriculture may never come, natural agricultural disease outbreaks strike the US with some frequency. Most measures that can be taken to reduce the damage of an attack on agriculture will likely help in natural disease outbreaks that have happened before and will happen again. Investments in animal tracking systems and disease control assets will surely deliver a concrete benefit even if an attack never materializes.

The threat to agriculture stems from two main factors: the technological barriers to an attack are easily surmountable by the least technically sophisticated groups and an attack on agriculture serves the stated goals of state and non-state actors. Groups that have the motives and the means to attack agriculture include states in economic rivalry with the US, foreign terrorist groups, criminals and domestic groups on the fringe of animal rights and ecological issues. Tempering this threat assessment is that, although the vulnerability of agriculture has existed for several decades and groups that have the motives and means to exploit this vulnerability have existed for an equally long time, no large attack on agriculture has occurred in the US or elsewhere. However, steps that can be taken to prevent and attack or mitigate its damage will also benefit the US economy when an inevitable natural disease outbreak strikes our country.

Mr. SIMMONS. Thank you for those comments. My question, first question, would go to Dr. Casagrande. You made the statement that the threat to U.S. agriculture is primarily economic. I guess as a casual observer, somebody reads the paper and watches TV.

I was intrigued by the case involving a woman who found a finger in her chili. That was pretty exciting.

Ms. LOFGREN. That was in my district.

Mr. SIMMONS. Yes. I stopped buying chili for a while after reading that story. I expect that the chili sales probably went down as people focused on the finger in the chili. So there was a significant impact even though there is no evidence that anybody was hurt.

Let me expand that example to one that occurred in my district involving avian influenza. The largest numbers of egg-laying chickens, I believe, are in Connecticut—and they happen to be in my district—approximately 8 million laying helps. They had a very suspicious outbreak of avian influenza that occurred in a portion of a coop near an unsecured door—due to OSHA regulations—near a wooded area. The birds had been segregated since they had been chicks. There was no cross fertilization, as you indicated, with new birds being introduced in either to the flock or to the house.

So there is some suspicion of human intervention. The policy of the Department of Agriculture was to destroy all 7 million birds. We intervened with the Department of Agriculture and got permission for a vaccination program, which was initiated over a year ago and was entirely successful, entirely successful.

Now, elimination of the birds would have cost anywhere from \$80—to \$100 million, not only to destroy the birds but then you have to dispose of them in a very expensive fashion.

The vaccination program costs about \$20 million. We don't reimburse for vaccinations, so the chicken farmers had to eat that cost. But nonetheless, this introduction of a disease into a very small number of birds in a very large population had huge economic impacts. That is the kind of attack that I would visualize.

Is that what you are talking about when you say the primary threat is economic? It is not that somebody is going to be poisoned individually?

Mr. CASAGRANDE. Yes, Mr. Chairman, thank you for the question. That is just one of a number of very many examples that exist throughout history. Another recent example was during the foot and mouth disease outbreak in the U.K. and parts of the rest of Europe. The consumption of beef in the U.S. actually dropped, even though foot and mouth disease does not affect people significantly.

It was said that there was some confusion between foot and mouth disease and mad cow disease. People watching the media were confused as to where the outbreak was taking place and what the risk was to the U.S. so it doesn't even need to occur here to have economic impact.

Another example that you might be familiar with the is Chilean grape scare, when there was some laboratory results that may have suggested that there was some cyanide in Chilean fruit. Well the consumption of fruit from all of South America dropped, whether it was grapes or other type of fruit.

So even though—no one died as a result of that. Even though the risk to an individual was extremely small, these attacks can have a devastating economic impacts well beyond their direct effect.

Mr. SIMMONS. So if, in fact, the nature of the attack is on the food supply, but it is actually an economic attack, then our response to it has to be precise, we have to have the intelligence ca-

pabilities either to prevent or to assess—once the attack occurs, and to limit the economic damage, which is the real damage, and then to provide reassurance to the public that their health is not at risk. Because, again, part of the point of a terrorist attack is to change behaviors to extend the economic impacts through fear.

Do you feel—and I know my time is almost gone. Do you feel that in the case of you, Mr. Reardon, your State or you, Dr. Casagrande, that the United States of America is prepared to respond to these types of attacks?

Mr. REARDON. Partially, Mr. Chairman, I know North Carolina has worked real hard in preparedness in some areas. However the issue that you brought up about economic stability and right siding that industry that may be affected by that act of terrorism, I would say we are not prepared for. There is a lot of work that we need to do to develop capability and capacity.

When we talk about adding—reassuring the public that that product is safe again or that they should consume that product again, it is going to take a lot of work by State agencies at the local level, a lot of testing, a lot of working hand in hand with industry to prove to the consuming public take that product is safe to consume again. So we have got to have some capabilities and capacities at the State level, Mr. Chairman, we don't have today.

Mr. CASAGRANDE. Mr. Chairman, I would like to respond, if I may, as well. I think you made two excellent points, that one, our protocols for responding to disease outbreaks, especially in animals needs to be examined closely. There is an excellent journal article published by Roger Breeze, formerly of the USDA, where he examines our current animal disease control policy and looks at the costs of vaccination versus culling. I would point your attention to that article.

Your second point about public education, I think that is vital to limit the damage, economic damage of attacks, even ones that don't directly affect the food supply, like foot and mouth disease, to limit the economic damage.

Mr. SIMMONS. I thank you both for your responses.

Now I yield time to the ranking member of the subcommittee, Ms. Lofgren.

Ms. LOFGREN. I thank you very much. As we listen to you, it seems that although many people have worked hard in good faith, we have got some challenges in this arena that we may not even fully understand yet from your testimony.

Mr. Reardon, I was interested that we might actually lack a full understanding of our vulnerabilities. I am wondering if you could tell us with specificity, at least some of the elements that we are missing on that sort of vulnerability scan in this arena.

Mr. REARDON. Thank you for the question, Congresswoman Lofgren. I think we do lack a full understanding of the vulnerabilities. We as a country have thought that when there was an issue at hand, that education alone may be enough. But I am going to suggest to the committee that we must do a complete vulnerability study of all of the sectors of food processing today, whether it is on the farm with livestock, whether it is within the processing, whether it is within the storage and then the final sale.

What we learned from the Exotic Newcastle Disease is simply that there were things that we did not know in our investigation that were revealed by acts of our own that may very well contribute to a tremendous cost to our own industry. Those kinds of vulnerabilities are there in a lot of places.

I think when you look at allocation of money and spending that money judiciously, if you will, the best thing to do is to do a complete vulnerability study, working with the Federal Government, also the State government and the local government, where we have the trust with those people that own and operate these facilities and that own livestock.

It is our responsibility to identify what the risks are before we start allocating moneys in a broad way. We need to know where we are spending our money. A component to that that we don't have at the State level—and the chairman spoke about it—is the intelligence. We need to know what the threats are so that when we do a vulnerability assessment of those industries, we know what the opportunity of introduction.

Then from that, we will develop the mitigation steps to reduce the likelihood of introduction of either a disease or a chemical or a biological. We need to be smart at how we go about this, but we need to go about getting it done.

Ms. LOFGREN. I assume if we are doing a vulnerability study for terrorism, the Homeland Security would have to play a lead and then bring in other agencies that have more expertise in agriculture. Would you both agree with that premise?

Mr. REARDON. I would answer that if I could, and then turn it over to my companion here. I think the thing that we are seeing is that Homeland Security has done a good job developing the NIPP, National Infrastructure Protection Plan. They are doing good work with the sector specific. The piece missing is the integration of the local and State governments. We must play—and we do play—a critical role in that piece and I would like to see that further.

Ms. LOFGREN. If I can—I am not from a rural area. I am from Silicon Valley, but we hear that complaint from State and local governments about everything, not just agriculture, it is everything—I think there is some truth to that. I don't think we are communicating that well.

I am wondering—well, I don't want to cut off Dr. Casagrande. But I am interested, Mr. Reardon, in what you have been told by DHS in this area. I mean, are you in the State level given information?

Mr. REARDON. Thank you again, Congresswoman Lofgren. We are given limited or no intelligence to our threats to agriculture. What I am finding at the State level, and I can speak for a variety of States, along with other boards, is that States are leaning forward with this, we know that it is our responsibility to protect the food supply.

However, we could be more effective judiciously and more effective costwise if we had greater interaction with Homeland Security and especially some line on funding. What we are finding from State Departments of Agriculture, the people where the rubber meets the road with food safety, we do not have a funding source

like CDC is providing to public health. So that particular piece is missing.

Ms. LOFGREN. Dr. Casagrande, you were just about to answer.

Mr. CASAGRANDE. No problem, Madam Representative. Well, let me reinforce the statements of Mr. Reardon that some States have taken it upon themselves to include agriculture in their intelligence gathering and analysis systems. Some States, to my knowledge, like Arizona and Iowa, have included agriculture representatives at the State level in their intelligence fusion centers, so representatives of law enforcement and public safety and agriculture and public health are all together in this one center. I think that is a model that the U.S. Federal system could learn from.

Ms. LOFGREN. I have 14 seconds left, so I will yield back the balance of my time.

Mr. SIMMONS. Hold those 14 seconds.

We now yield to the chairman of the full committee, Mr. Cox from California.

Mr. COX. Thank you very much, Mr. Chairman, thanks both to your witnesses, who are both very well prepared to talk with us about agro-terrorism today.

I think what we have heard so far is a stark illustration of the difference between threat and vulnerability, "threat" being a term of art in the intelligence world meaning terrorist capabilities, plans and intentions. Nothing that I have heard in the testimony thus far reveals any new information about terrorist capabilities in this area, or actual plans, or intentions, but what I have heard is that the vulnerability is significant.

I want to make sure that we are all on the same page and that I am interpreting your testimony correctly. I have before me a CRS report for Congress that is updated through February 4, 2005. The title of it is Agro-Terrorism Threats and Preparedness. CRS is the Congressional Research Service.

According to this report, bioterrorism is mostly a theoretical consideration. Would you both agree with that?

Mr. CASAGRANDE. If I may answer that, Mr. Representative. Yes. I think we have very little data on terrorist motivations and what they want and what their plans are. If we had that data, we would stop them. However, if we compare what we presented as the vulnerabilities to the technical sophistication required to exploit those vulnerabilities, we can begin to pare down the actors that could affect us.

Then if we look at those terrorists-stated motives, we can compare that with what can be accomplished by an attack on agriculture and see of those remaining actors, who would want to attack our agriculture. Beyond that, we don't have any data. So we can't really say that these people will attack us at any given time.

Mr. COX. Mr. Reardon.

Mr. REARDON. Yes. Mr. Chairman, I would have to agree with that statement is that it hedges on intelligence. From the State perspective, a lot of times we are not in the loop, if you will, with having that information to really summarize exactly what the vulnerabilities are.

I think what you said, they all interact. You have got to know what the threat is to understand what the vulnerability is. From

the State level, we don't get the State information to really evaluate what the State vulnerabilities are.

Mr. COX. Well, I think it is useful to parse the vulnerabilities. Usually we want to make all of these things available in a comprehensive analysis, but studying our vulnerability is something we have a little more control over.

Mr. REARDON. Absolutely.

Mr. COX. I don't want to trivialize this whole topic by saying it is a theoretical threat at the moment, because it was merely a theoretical threat that airplanes were going to be used as missiles and flown into buildings.

It took some forethought to imagine that before it happened. As we know, there was, in fact, a national intelligence estimate prepared before 9/11 that was authored the chairman of the National Intelligence Council, who was the former staff director of this committee, that said that Al-Qa'ida could fly airplanes into buildings in Washington D.C., exactly what happened.

It was just theory, but imagining that before it happened, had we acted more aggressively on it, would have been a very useful thing. So I don't mean to trivialize it at all. But we are also trying to establish a baseline in this hearing of what has happened so far, because we have to make trade-offs about how we are devoting our resources and in what way.

So understanding as best we can in this open setting and then in the classified setting that we are going to retreat to later this afternoon, where we will get a full briefing that we will go as deeply as we can go to the current capabilities and intentions of terrorists, is I think the best way to start.

But if I can then leave behind us the threat piece, because I think we have covered it. It is essentially both as a matter of history and as a matter of taking a snapshot today, a theoretical concern that terrorists are going to do this.

I have to say that my greatest concern is that someone, Dr. Casagrande, with your knowledge and background and creative insight, would ever turn to the dark side. Because then our vulnerabilities become a big problem.

What can you tell us about indicators that we might be able to look for that people, not you, but people who might provide this kind of scientific expertise to terrorists, were actually meeting up with them or that somehow this illicit commerce was beginning where we hadn't had it before.

Mr. CASAGRANDE. Thank you, Mr. Representative. I think, unfortunately, due to the very low technical barriers of an attack such as this, there doesn't need to be any specific scientific expertise married with the will—just our reconnaissance on our agriculture systems, where these people should put the pathogens, what would be the most devastating by looking at our economy and how the commodities flow.

Mr. COX. So, for example, would someone then reading your testimony on the Internet today get enough of a clue about where they should go, that they could do it without a whole lot of additional help from somebody like you?

Mr. CASAGRANDE. No, the operational detail has been left out, such that they wouldn't know exactly what to do.



Mr. COX. So where would they get the operational detail? Who could help them with that?

Mr. CASAGRANDE. Well, by studying how our agricultural commodities move, exactly what facilities they can gain access to, exactly where the most animals come together and then go across the country and how—

Mr. COX. In other words, open source information?

Mr. CASAGRANDE. Absolutely.

Mr. COX. Without the specialized training?

Mr. CASAGRANDE. I think so, yes. One somewhat near example is the case of Rabbit Calicivirus in New Zealand. Rabbits are an imported animal, and they are a pest to agriculture there.

The farmers decided they wanted to spread a pathogen amongst the rabbits to get rid of them. So these farmers, through secret networks, were able to import the disease. Each one was able to magnify it and spread it amongst the rabbit population to devastate the rabbit population there. So a similar thing could be done by equally untrained people in the United States.

Mr. COX. Thank you.

Thank you, Mr. Chairman.

Mr. SIMMONS. Thank you, Mr. Chairman. The Chair now yields to the distinguished ranking member of the full committee, Mr. Thompson.

Mr. THOMPSON. Thank you, Mr. Chairman.

Mr. Reardon, in your present position, what type of threat information do you receive at this point?

Mr. REARDON. Congressman, I would have to tell you that I oversee the State's food inspection program. We inspect about 9,000 facilities a year, handle 600 consumer complaints a year and do quite a bit of work. We presently do not receive any information regarding threats to agriculture.

Mr. THOMPSON. Do you think it would be wise for a system to be devised that would provide you with that information?

Mr. REARDON. I think it is imperative that if that information is available, that a person such as myself should receive that information. There is a lot that I have at my disposal at the State level as far as resources and people and sampling capability and so forth—that as we check for a variety of products on the market every day we look for pesticides, pathogens—a lot of things in survey samples, other tests and during inspections of facilities.

If we had information regarding threats to agriculture, we could redirect some of those resources of those areas where they may be more appropriately used. So I think there has to be a system that shares with transparency that information with officials such as myself at the State level.

Mr. THOMPSON. If the Federal Government, through the Departments of Homeland Security, Agriculture or Health and Human Services saw agro-terrorism as a potential threat, how—I am trying to put the interface together with your department—who would receive it in North Carolina now if such a threat existed?

Mr. REARDON. There may be a couple of ways that that information could come in. It could come into our Secretary of Crime Control and Public Safety, which would be responsible for the disbursement of ODP funds. It could come into an emergency operations

center that would normally handle, if you will, hurricanes and other kinds of disasters.

But more appropriately, that information should come into the agency that has responsibility for the area to which that information pertains. The fewer hands that information goes through, the more likely that it will be accurate, and that the appropriate agency can capably react to it.

So I would suggest that in most States today, the Food and Drug Administration commissions people at the State level, they do background checks. They give them the ability to conduct inspections and to collect paperwork and collect samples on behalf of the FDA. We need some system in place that would identify who those key people are at the State level so they can be provided with information that could reduce or at least allow them the opportunity to reduce the likelihood of an attack.

Mr. THOMPSON. How much outreach has there been to educate the public about reporting potential acts of agro-terrorism or any kind of disease-borne illnesses that might be released in the environment?

Mr. REARDON. What I am seeing from a State level, and I can speak more specifically about North Carolina, is that we did make foot and mouth disease, Exotic Newcastle Disease, a reportable disease to the State veterinarian. We have done a lot of work and as recognized in several reports, North Carolina is recognized as being one of the leading States in being progressive and forward leaning, if you will, on those kinds of issues. So North Carolina has really done a lot of things to create the groundwork that we would move that information very quickly if there was a disease in place, from a State perspective.

Mr. THOMPSON. But your testimony today is that from the Federal level, you are more or less out of the loop at this point?

Mr. REARDON. That is correct.

Mr. THOMPSON. Thank you.

I yield back, Mr. Chair.

Mr. SIMMONS. The Chair recognizes the gentleman from Nevada, Mr. Gibbons.

Mr. GIBBONS. Thank you very much, Mr. Chairman, and to each of our witnesses, first of all let me apologize for missing your opening statements. It has been fascinating to listen to some of your answers today. Both of you have expressed how easy it would be to attack the U.S. agricultural base.

I guess my question is, in your view, why haven't we been attacked in the agricultural base so far.

Mr. REARDON. Yes. I would like to respond to that, Mr. Representative. There is a number of potential reasons. But what we can say is—let me preface this by saying we don't know. There are a number of reasons that could be a terrorist attack on agriculture isn't as good theater as a truck bomb.

Mr. GIBBONS. That would bring that up question, would a terrorist attack on our agricultural base yield the kind of threat or fear that is normally associated with a mass casualty event? Do you think that our standard safety procedures that we already enact through the food control mechanisms in States and localities would help, or can help us prevent a mass casualty event.

Mr. REARDON. So a lot of most dangerous pathogens to agriculture as a system, economically, don't affect people at all. So limiting the damage of an agriculture attack is part of a public information campaign to notify them of what their real risk is. If the pathogen used in an attack is harmful to people, and there is some threat through food supply or through contact with an infected animal, then that does alter the equation. I think also public information is still required so that people don't overreact.

Mr. GIBBONS. Might there be a risk that a terrorist group would try to take credit for a natural-occurring disease or something within the agriculture base versus a precipitated intentional act.

Mr. CASAGRANDE. Absolutely. A covert attack on our agriculture could be disguised as a natural incident or the signatures of a natural incident could be manipulated by someone wishing to take credit for it to make it seem intentional.

To use an example that Mr. Reardon used earlier—the introduction of foot and mouth disease into Taiwan. Supposedly it was started by pigs that were surreptitiously imported from China, and foot and mouth disease is partially endemic. It would be very difficult to distinguish pigs—well intentionally imported, but accidentally infected, from those that were intentionally infected by Chinese agents wishing to hurt Taiwan's economy. There would be almost no signatures.

Mr. GIBBONS. Do you believe, very briefly—just a quick answer would be very acceptable, that there is a greater threat to the agriculture base from natural disease or a greater threat to a precipitated terrorist attack?

Mr. CASAGRANDE. I think natural disease has occurred—well, I know that natural disease outbreaks have occurred many times over the years, and there is no evidence that they will stop.

Mr. GIBBONS. Let me ask you this, the 9/11 Commission which student studied in depth terrorist attacks on this country following the attack of September 11th, did not make any reference per se to agro-terrorism or, on the food supply, in their report, can which was vast, authoritative and well received.

I guess, two questions, why do you believe that the 9/11 Commission omitted a lot of the reference or questions about agro-terrorism. Secondly, more importantly, what do you feel in your heart of heart, regardless of whether its agro-terrorism or anything else, what do you feel is or are the top threats that we face as a Nation? Two questions.

Mr. CASAGRANDE. Well, in my opinion, I think we can expect more of the same that terrorists will use relatively rudimentary themes to attack such as large vehicle bombs, guns, shootings, that kind of thing, because that is what history has taught us so far.

Mr. GIBBONS. Okay.

Mr. Chairman, thank you very much. I yield back the balance of my time.

Mr. SIMMONS. I thank the gentleman for his questions.

I turn to the gentleman from North Carolina, Mr. Etheridge.

Mr. ETHERIDGE. Thank you, Mr. Chairman.

Dr. Casagrande, let me follow that one up. I think you have indicated that, you know, you are not really sure a person can be sure when an agro-terrorism event has taken place, nor whether or not

it is—is there any way, once it has taken place, I guess is my question, to distinguish scientifically whether it was intentionally done or it was by natural or by accident?

Mr. CASAGRANDE. Mr. Representative, there are some ways that you could get signatures out of some types of attacks. If the initial foci of infection, where the infections started, were in multiple places almost simultaneously, that would argue against it being natural.

If there are multiple infections without any connection to previously-infected facilities, that would be another indication that it was intentional.

However, speaking to another example that Mr. Reardon gave earlier, the Exotic Newcastle Disease outbreak, some of that, the control of that disease was hampered by people illegally transporting fighting birds throughout the southwest. So that is illicit activity that was causing new outbreaks that could be mimicked by an intentional act.

Mr. ETHERIDGE. Thank you. Mr. Reardon, I understand that every State with a significant agriculture base is different, by and large, and a number of States have followed North Carolina's lead in developing the response plans.

Based on your experience and working with others in a national level in all aspects of food preparation, what can we do at the Federal level to insure that the resources to secure our agriculture sector are properly allocated. You alluded to that earlier, but I will give you a chance to do it in one, two, three, four.

Mr. REARDON. Congressman Etheridge, I really appreciate that question. I think that there are already some vehicles in place in low-hanging fruit, if you will, that the State agencies today inspect a lot of facilities, they work really hard to ensure that the food supply is safe.

If you look at some of the data that is available to us, you know, from a State perspective, we inspect about 2.5 million facilities in the United States today. The States do that. They actually inspect 86,000, of which are subject to FDA inspection. They follow up on 46,000 consumer complaints a year. In North Carolina, we follow up on 600 ourselves.

What we need to make us stronger Nation is not that FDA, if you will, which works with us, to become bigger, what we need is that we reinforced the relationships that we have today and strengthened those and realized the important factor that the States play in food safety every day.

One piece I would like to add to that is the consumer complaint databases that is across this country today; North Carolina, we do 600 consumer complaints a year, some might involve food illness, food tampering, a variety of things. There needs to be a mechanism at the Federal level that will capture that consumer database complaints, surveillance, if you will, and put the pieces together early—or that North Carolina is having a bottled water complaint, so is Tennessee, so is Kentucky.

What we will find is the quicker we identify and recognize something that is happening not only in our State but in other States, the quicker we can respond. In this case we don't need bigger FDA, we need a greater relationship with FDA.

Mr. ETHERIDGE. Or coordination?

Mr. REARDON. Yes, sir.

Mr. ETHERIDGE. I think you have touched on the other one to make sure we don't duplicate at the Federal level or undermine the State response.

Let me move to another question quickly before my time runs out. In your testimony you spoke about the threat of the Nation's poultry being the about unshipped birds being shipped through the U.S. postal system. Would you like to elaborate on that a little bit more and the risk it poses to one of the large industries, not only in our State but in this country?

Mr. REARDON. I would very much like to talk about that particular issue. When North Carolina initiated the assessment for vulnerability for the opportunity, if you will, for Exotic Newcastle Disease to come into North Carolina, I would remind you when it came into California it cost nearly \$160 million. Some of you from California understand that. Even in the height of that, \$160 million. It only involved 22 commercial facilities. In North Carolina today, we have 4,500.

What we saw with our assessment of what was going on with the movement of birds in our State, during the very height of that outbreak in California and late 2002, early 2003, we were daily receiving birds in our State. One county north of the quarantine area in California was coming into our United States postal facility, being stacked on wooden crates, if you will, or floats, fans blowing through those birds for several hours, and then those birds dispersed through our State and sent to other States.

In the appendices that you have, we have documented the actual zip codes of where those birds come to and where they were shipped to.

Mr. REARDON. I will suggest to you, even without support data, that if any of those birds could have potentially been exposed or had Exotic Newcastle Disease, the threat to our \$2.1 billion industry in our State would surely have been elevated. We formally do ask that that concept of moving untested, unregulated birds through the United States Postal Service be reviewed. Thank you.

Mr. ETHERIDGE. Thank you. I yield back, Mr. Chairman.

Mr. SIMMONS. Thank you for those terrific questions and the responses.

The gentleman from Pennsylvania, Mr. Dent.

Mr. DENT. Thank you, Mr. Chairman.

To follow up on Representative Gibbons' questions a little bit, at least in my view, my State agricultural officials seem to be pretty responsive in Pennsylvania with respect to outbreaks of avian flu or plum pox virus, or whatever the pathogen may be. Do you share that view, that State officials are quite good at attempting to contain these types of outbreaks that are naturally occurring?

Mr. REARDON. I would suggest to you, Congressman, very passionately so. These States work hand in hand. They know these people that own these farms. They have a daily relationship with the associations. Absolutely, they are.

Mr. DENT. And, in your view, do you believe that may be part of the reason why we have not seen attacks on our food supply?

That terrorists may be aware of our capabilities and our ability to contain?

Mr. CASAGRANDE. Mr. Representative, if I may. I wouldn't think so, because the attack doesn't have to spread out of control, in an out-of-control manner, in order for there to be severe economic consequences. Merely the presence of a foreign animal disease or a plant pathogen, a plant pest in our country can have wide-ranging impacts not only in our trade markets but also the stock market.

Mr. DENT. And one more question specific to the dairy sector in my State, and many of the Northeast and New England States have a big dairy sector. Forty percent of my ag output is in dairy. How well are we doing in the dairy sector in this country in terms of protecting ourselves?

Mr. CASAGRANDE. Well, dairy actually has—it has been the leading industry in animal tracking, especially in certain States like Wisconsin, which has a humongous dairy market. These groups have taken it from the beginning to make sure that every animal has a unique identifier and they are tracked when they move from farm to farm. That type of system will greatly facilitate the tracking of, the disease spread, and the containment of the spread. So dairy is one of the industries, for that reason, that is not as vulnerable as others; but also, because it is generally less consolidated and less large than the beef industry. You will have smaller farms with fewer animals than a large feed lot.

Mr. REARDON. And if I may, I would like to follow up on that. In North Carolina, we could not be prouder of our dairy association, their leadership and forward thinking. They have taken many steps today to reduce the likelihood of tampering with their product and movement, production, and distribution. We could not be prouder of that industry.

Having said that, though, I did participate in a tabletop exercise, and this really draws to the Chairman's statement earlier on in which we assimilated a potentially contaminated fluid product and how we would get that product off the market and how we would restore consumer confidence. But the answer from the retailer was: We will just simply remove that product from market and won't offer it again.

And it was quite alarming when I know that person that owned that large dairy plant and all the different people that work in that plant that depend on it in their communities and their financial support coming from that plant. And that is something that we are going to really need to work on is how do we handle the recovery of getting that company up and going again and back doing business. So there are many dimensions to this issue.

Mr. DENT. Thank you.

Mr. SIMMONS. I thank the gentleman for his questions. And the comment goes right to the issue that I raised, and I would like to make another comment about it. But first I like would to recognize the distinguished gentleman from Rhode Island, Mr. Langevin.

Mr. LANGEVIN. Thank you, Mr. Chairman. I want to thank you gentlemen for both being here. I eat a lot of microwave dinners, and they are tasting better and better every day.

But Dr. Casagrande, if I can begin with you. As Chairman Simmons noted earlier, former HHS Secretary Tommy Thompson stat-

ed that, "For the life of me, I cannot understand why terrorists have not attacked the food supply, because it is so easy to do." Now, as Secretary, he would have had access to the most sensitive information about threats to our food supply.

So if you could, just in general terms without being specific, in your judgment, what stage of the food production process presents the greatest agro-terror threat that is the most vulnerable? And how would you prioritize the level of threat among the remaining stages of the food production process?

Mr. CASAGRANDE. Thank you, Mr. Representative, for that question. If we are looking at tampering with food as opposed to attacking agriculture, animals, or plants in the field to cause economic damage, I would say the biggest vulnerabilities lie in products that are produced in bulk and then shipped across the country, especially at points in that production that is after processing methods that would kill bacteria or viruses such as pasteurization and cooking.

If someone could tamper with the packaging line of an ice cream plant, for instance, after all the materials are pasteurized or treated, if they are, then that would be an area of vulnerability.

Mr. LANGEVIN. Thank you.

And Mr. Reardon, to your knowledge, at what point would an entity like the Department of Homeland Security or the Federal Bureau of Investigation become involved after, for example, if foot and mouth disease or some other type of outbreak were to occur? And have you at the State level received any briefings or guidance from DHS or the FBI in the agro-terrorism area? And, again without getting the specifics, if so, then what is the nature of that guidance and information that you have received?

Mr. REARDON. Thank you, Congressman Langevin.

To answer the second part of the question first, and I testified earlier that we haven't received—my particular division that oversees the food inspection program in North Carolina—any information from Homeland Security regarding any potential threat. However, we would welcome the opportunity to receive in an official capacity that kind of information.

Mr. LANGEVIN. So neither information nor any contact with DHS?

Mr. REARDON. We have had contact with DHS. We were just up here a few months ago presenting a proposal to do some work for them to identify such a specific vulnerability work. We think North Carolina leading forward is a great State to do some of the vulnerability work that can be used as a national template.

Having said that, though, we have not received any information at the State level regarding any particular known threat to a food product.

Mr. LANGEVIN. Mr. Chairman, that goes back to our real need for a threat and vulnerability assessment, and certainly protecting our food supply has to be a major part of that threat assessment.

So thank you, gentlemen, for your testimony. I yield back.

Mr. SIMMONS. I concur with the gentleman's recommendation. And that is something that perhaps Mr. Etheridge and other members would like to pursue a little bit on behalf of the subcommittee.

Mr. ETHERIDGE. We would. Thank you, Mr. Chairman, very much so. Yes.

Mr. SIMMONS. Thank you for offering to do that.

I would like to get back briefly to the bird market issue. It is my understanding that poultry farmers in America today, whether they are raising broilers or layers, are very careful to segregate those birds, very large populations of those birds, and to track them as best as they can, and that usually they arrive in the form of birds or chicks, and then they are segregated throughout most if not all of their remaining lives.

But there are occasions where birds that are purchased through bird markets in urban areas, or older birds who are shipped through the mail, can be exposed to other birds. And if we take the anthrax example—people remember 9/11; they often forget that there was an anthrax attack following 9/11. We still don't know all the details about it, but the postal service was used as a delivery means. The postal service was used as a delivery means. And what you have pointed out is that the postal service is a delivery means for agricultural animals as well. And under certain conditions, I suspect contaminated birds could be put through that system and spread that disease. Is that a legitimate threat scenario?

Mr. REARDON. I think your summary, Mr. Chairman, is right on the money. To give you some idea, in just those 8 days we were there before we were asked to leave and not come back, we identified eight cases of wild turkeys coming into North Carolina. We spent millions of dollars in our State in the restoration, if you will, of our wild turkeys and are quite proud of what we have.

It was obvious in the way they were packed that they were intended to be released. Those birds had no testing information at all copying those birds. We had 14 cases of ducks. We had 14 cases of quails and geese and guineas and such as that. However, we had 50 cases of fighting cock birds that were coming into North Carolina. And what I will suggest to this committee is that a risk or a vulnerability in most cases is not a single dimensional issue; it is omnidimensional. And so if you have those birds coming into your State but they are going to a group of people who work primarily in our commercial poultry facilities, you have taken a static risk, and now you have elevated that risk.

What we found in the information we gathered is not that we had a single dimensional risk that the birds are coming into the State without testing. That absolutely is an issue. We even found that they were going to people that were most likely working in our commercial facilities. So, in essence, they were in proximity to untested birds on the days that they would work with our commercial flocks. Although we weren't able to trace those birds to deliberately determine that, we could see that there was a trend in that neighborhood. And so most risk that you will uncover of vulnerability will be multidimensional. And there may be pieces that we didn't even uncover.

But to answer your question, yes, sir.

Mr. SIMMONS. I appreciate that response.

I have one additional question for Dr. Casagrande. You spent a substantial period of time in Iraq, and I won't ask you the \$64,000 question about Iraq. We will pass over that for the time being. It



is my understanding from the same CRS report that the Chairman referred to that at least nine countries in the 20th century had agricultural bioweapons programs: Canada, France, Germany, Iraq, Japan, South Africa, United Kingdom, United States, and the former USSR. And that four other countries are believed to have agriculture bioweapons programs: Egypt, North Korea, Rhodesia, and Syria.

Let me focus on Iraq, North Korea, and Syria a little bit. One of the concerns we have at a strategic level is that sovereign States, or what are sometimes referred to as rogue States, may have national programs to develop weapons that then can be passed to others to use in terrorist attacks against the United States, western Europe, or other democracies around the world.

In your experience in Iraq and in your experience in dealing with these issues in the past, do you have any concerns about any of these countries passing weapons or technologies to terrorist groups?

Mr. CASAGRANDE. That is a very interesting question, Mr. Chairman. If you look at the history of State programs in biological warfare against crops or livestock, I personally think it is not particularly instructive to the terrorist case. The reason for that is most State programs focused on decimating the food supply of their rival, especially if that food supply was dependent on one staple crop.

An excellent example was from the U.S. offensive program when we had one in the 1950s and 1960s where we targeted the Chinese rice crop, because at the time it was estimated that causing massive famine by targeting rice would be a more efficient way of degrading their military capabilities than nuclear weapons even.

With that in mind, the U.S. is not a very good target because our food supply is very diverse and very plentiful. Now, however, in the modern era where we are not looking at open warfare between rival States, especially against the United States because the retribution would be too devastating, that is when you look at the smaller covert attacks to sow economic damage, to undermine our primary strength in the world, which is economic. And in those cases, States can be very threatening to us.

Now, as far as passing technology on to terrorists, I would say it is not particularly necessary, and that is because it is—as we have stated, it is very easy to do and there are very few technological barriers that a State could surpass that one educated individual or a small group could not.

Mr. SIMMONS. Thank you very much for that response.

It is my understanding that we will be called for votes between 3:30 and 3:40 this afternoon. We obviously want to recess and go over to the secure facility to complete the hearing. I guess it is my thought that, if any of the other members have questions that they want to ask for the record, I would be happy to recognize them until we hear the bell. Then we go vote, and then we go to the secure facility if that is agreeable. Are there any other members who wish to be recognized?

Ms. LOFGREN. I would defer to Mr. Etheridge.

Mr. SIMMONS. Mr. Etheridge. Yes.

Mr. ETHERIDGE. Thank you, Mr. Chairman. Very briefly. I believe my good friend from Nevada, Mr. Gibbons, raised a question about whether or not Al-Qa'ida had—the terrorists had paid any attention to the Commission. And Dr. Casagrande, I would ask you on this one, because as I remember from the 9/11 Commission Report, they may not have brought it up, but we do know that Al-Qa'ida, in terms of the documents that were collected, is known to have had studied our agricultural industry, and that our forces, the U.S. forces, found hundreds of pages of information about our agricultural and livestock industry that was translated into Arabic as part of the terrorist training manuals. Is that your understanding?

Mr. CASAGRANDE. Mr. Representative, that is my understanding as well. And also to magnify that, Al-Qa'ida has stated many times that it is their duty to undermine the economy of the United States as part of a larger offensive.

Mr. ETHERIDGE. I only raise that question, Mr. Chairman, just so we make sure to have it on the record, because I think as we look at it, that needs to be a part of it, I think, as we are looking at our overall assessment of vulnerabilities and security of this country. The truth is everything is at risk, I think, when we get to that.

Thank you. And I yield back.

Mr. SIMMONS. Do any other members wish to be recognized?

Ms. LOFGREN. Mr. Chairman, just a quick question. I think this has been a helpful hearing, and it has certainly outlined the challenges and issues for us. One of the things we haven't talked about, really, is the importation of material from outside the United States. And it is not really the focus of the hearing. But as I was listening to the economic damage, I was recalling my days in local government when I actually did have some agriculture I represented, including the flower growers. And there was just a devastating fungus that actually was imported from South America that had, I mean, millions of dollars in damage. And that was directly imported flower stock that was not adequately inspected.

I am wondering if there is an issue there that we also need to focus on, not in terms, obviously, of flowers, but other kinds of—animals, I think, get a little bit more inspection than plant goods in terms of the economic impact. Are we overlooking that issue here today?

Mr. CASAGRANDE. I don't think so. I mean, I think that is where the vulnerability stems from. The most damaging pathogens are not endemic to the United States; they are coming from overseas.

Now, if they were intentionally imported, and as I go into in the full testimony, there could be simple ways of doing that. However, unintentionally, pathogens can enter the United States in some tourist's baggage who wants to take home fresh sausage or fresh plants, fruits, or vegetables in some instance. And I think that is why the USDA must remain vigilant and has remained vigilant at our ports of entry to prevent the accidental importation of something very dangerous.

Ms. LOFGREN. Mr. Reardon.

Mr. REARDON. Yes. I would like to add to that just this week a personal a experience. I had contact from one of my neighboring States regarding a product that was being imported from Africa. It

had aflatoxin in it at the level of 800 parts per billion. The legal limit for the United States is 20 on peanut butter. Can you imagine that? I didn't look at the toxicological aspects. Two days later I received a report from Kenya of people dying from aflatoxin poisoning in Africa.

So what it said to me is that those products passed through to customs of FDA and were being distributed here in the United States. What was surprising to me is that the distributor of that product was located in North Carolina, and I had to hear it from someone in Virginia without FDA ever being involved. We can do better than that. But what it says is that there are a lot of products coming into this country that we are not testing, that we don't have oversight for. And when you look at aflatoxin at 800 parts per billion in those kind of products, we need a safety net.

Ms. LOFGREN. Most of what comes in is not inspected.

Mr. REARDON. Is not inspected. That is correct.

Ms. LOFGREN. And that is the concern: How do you get that level of protection without destroying the commerce that is necessary? And I don't know what the answer is.

Mr. REARDON. One of the things that I alluded to earlier, and I would suggest to the Chairman again, is that we need to develop at the Federal level a way to capture the consumer complaint information across all the States. When you look at the amount of work that is done as far as consumer complaints, on an average scale the Nation's State inspectors handle about 46,000. In our State, we handle 600. We may share information with FDA on 5 of those 600 if we think it is truly significant.

But I think it would serve this country well to create a national database so that we can look at syndromic data from across this country and not just encapsulate that data in each State. So there is much work to do on that, but I think that is a great starting point.

Ms. LOFGREN. Thank you, Mr. Chairman.

Mr. SIMMONS. Thank you for those questions. The gentleman from Nevada.

Mr. GIBBONS. Thank you very much, Mr. Chairman. And to our witnesses, both of you, thank you very much for your time and presence here today and the information you have shared with us.

It seems to me that we oftentimes focus on terrorist groups known as Al-Qa'ida. What is—or is there a threat from non-Al-Qa'ida terrorist threats; for example, Earth Liberation Front, to our agricultural industry today? Is there a threat? And how do you perceive that?

Mr. CASAGRANDE. Mr. Representative, I agree. I think Al-Qa'ida is actually just one of a few groups that have the motivation and the means to attack agricultural. One of the reasons why I am surprised an attack hasn't happened yet is because the vulnerabilities have existed over the past several decades; they are only getting more acute, but they have existed. And the profit motive that could be there to attack agriculture from criminals, not terrorists, but people just wishing to make a buck has been there for a very long time as well.

So criminals, I think, is one group. And groups like you said, radical environmentalists who are opposed to genetically modified

crops, for instance. Most of the corn we have in the country is genetically modified, a lot of the soybeans; they have a psychic need to attack agriculture because their attack is not only a means to an ends but an end in itself. It gets rid of what offends them.

Mr. GIBBONS. Let me ask the final question. Does the U.S. Government possess the tools to detect, interdict, and to stop attacks that we can't envision through our assessment of vulnerability today? Do we have the tools?

Mr. REARDON. Congressman, I would suggest to you that, yes, we have the tools within the United States, but they have got to be properly utilized and developed. What we need at each State level is greater development for response capability.

We in North Carolina have a crisis response team that is trained in incident command structure that will be stood up in the event of a food issue. We need that kind of capability in all States. We need the resources to provide infrastructure development at the State level. We need greater resources to provide capacity testing for known pathogens and chemical agents at the State level. We know that from a State perspective we will in some cases be involved with an issue potentially, and not even aware early on that we are involved with that particular issue.

So there is much work to do to get us in a position that we can detect, remove, and right-side an industry. So this is going to be a long path for the food industry.

I will say one thing. We have worked since 1906 to develop a food safety culture. We are just beginning to embrace the definition of a food defense culture. It could be as simple as a return goods policy at a small convenience store where a product would be put back on the shelf by someone wishing to do us harm, whether they are an exotic terrorist or someone within our own country you just alluded to.

So we have got to develop, have the resources at the State level so that we can work with our food industry to say, you know that person bringing that product back to the store? Here is the reasons you wouldn't want to return it to your shelf. You no longer can take goods back into your store that went back the door.

That flies in the face maybe of some policies of smaller stores today. There is a mechanism to actually provide that funding with FDA and States, and that is through contract work. We need more money coming from FDA and the food inspection to State agriculture departments, where the rubber meets the road, to conduct these kind of food defense inspections and provide this defense strategy.

Mr. GIBBONS. Well, I think there is an issue here about how much the Federal Government's responsibility encompasses or encapsulates the State's responsibility as well as to provide those resources and provide that technology in each State, since each State has somewhat different requirements.

I know my State of Nevada has a vastly different requirement than the State of North Carolina. I would think it to be the responsibility of Nevada to develop and encourage its own food safety programs, its own food safety technology, based on what it sees coming in as the threat to the State of Nevada.

Mr. REARDON. Congressman, I would agree with you in one sense. But I might add to you that because this is a national issue, if we have a contaminated product in Virginia, it may influence the product sold in Nevada. If we have one in North Carolina, it has a national issue to this. So I think there has to be Federal guidance in this, and working hand in hand with the States to develop this.

Mr. GIBBONS. I think we can do that, and I think there is an opportunity for us to work together to find those common grounds. But I think we cannot escape the idea, either, that States have an obligation within this. It is not just an FDA, Federal, rule or role. So I just want to make sure that our point is clear: We want to work together, we want to find solutions that are common that can be applied universally.

Mr. REARDON. Absolutely.

Mr. GIBBONS. But not everything in the world can be funded by the Federal Government.

Thank you, Mr. Chairman.

Mr. SIMMONS. I thank the gentleman for his remarks. Do any other members of the committee have questions to ask on the record at this time?

Hearing none, I want to thank both witnesses for their valuable testimony. Clearly, you bring many years of practical experience to the question. We appreciate that very much.

Members of the committee may have some additional questions for the witnesses; and if we do, we will submit them in writing and ask for a written response. The hearing record will be held open for 10 days.

I would like to remind members that we will adjourn and be prepared to vote, at which point we will then go to the committee SCIF for the classified portion of this hearing. I am particularly interested in what I have learned today about the economic impact of terrorist attacks on agriculture. It is not really a question of poisoning this person or poisoning that person. It is really a question of bringing us down through economic initiatives.

I think it is fascinating that we have had a food safety system in place since 1906, and now we are putting on a different thinking cap; it is called a food security thinking cap. I am sure there are overlaps between the two, and I hope that we can take advantage of those overlaps so that we don't reinvent the wheel. Information sharing has come out clearly as something that we need more of, whether it is among States or between the States and the Federal Government, and that certainly comes within the jurisdiction of this subcommittee.

And let me just leave everybody with this thought. The 9/11 Commission reminded us that our Intelligence Community on 9/11 suffered from a, quote, "failure of imagination," unquote. The fact that we have not seen these things in the past or even in the recent past doesn't mean that they are not being considered and that they won't happen. And we take it upon ourselves as part of our responsibility not to be involved in another failure of imagination. And we thank you for your participation in this process.

Thank you very much. And we now stand adjourned.  
[Whereupon, at 3:38 p.m., the subcommittee was adjourned.]

